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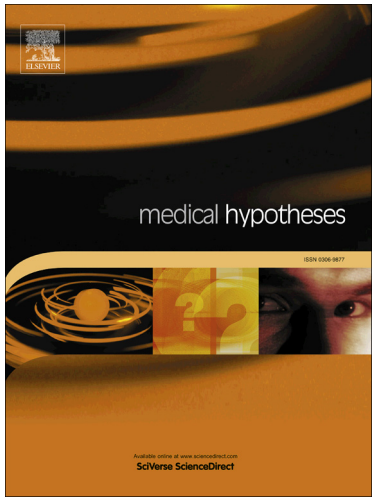

Boiling factors in the pot of type 1 diabetes mellitus management: the role of exercise

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- Correspondence -

Boiling factors in the pot of type 1 diabetes mellitus management: the role of exercise

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Dear Editor,

I found the article by Farinha et al. titled “Exercise for type 1 diabetes mellitus management: General considerations and new directions” [1] of much professional and personal interest. The authors overviewed the benefits of training subjects with type 1 diabetes mellitus (T1D), particularly focusing on modality of anaerobic - high intensity exercise - for reducing exercise-induced hypoglycemic episodes. They ultimately hypothesized a training protocol combining strength training and high intensity interval training, capable to minimize exercise-associated drops in glucose levels in T1D. This speculation makes two complementary observations that can be further discussed.

First, the authors pointed at the crucial effects of exercise in mitigating oxidative stress and inflammation, which are potentially triggering the autoimmune process towards the insulin secreting cells. Such background information, fascinatingly challenged by the same authors in previous studies [2,3], introduces another effect exerted by exercise: a putative immunomodulation of systemic functions to both T1D and inflammation [4]. Not only exercise would elicit glucose-lowering effects [5] but also, according to our epidemiological screening, it would be able to prolong the “honeymoon” phase in active people, like athletes with T1D [6].

Second, if the training orchestrated by the Authors were likely to stem metabolic destabilization post-effort (as several recent data are similarly suggesting [7–9]) then the program would hardly cover, in the long-term, all

the supposed health-related adaptations for subjects with T1D without including a decent contribution from aerobic exercise. Although the optimal glucose control remains of paramount relevance in T1D, conclusively, long-term health and life expectancy are still favoured by regular aerobic exercise. Even in islet-transplanted ultra-marathon runners with T1D, we ascertained that an abundant volume of aerobic training counteracted diabetic symptoms and alleviated the side effects of immunosuppressive drugs, over a 10-year follow up [10].

Besides, an exercise program based solely on high intensity mode may not be easily administrated to everybody, without a certain degree of familiarization. Nowadays, multiple technologies are available and can facilitate an adequate training, under this perspective [11].

Certainly, all these factors, albeit conceptually simple, are boiling in the same pot and they need to be carefully managed in order to prepare personalized recipes benefiting countless people living with T1D.

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Conflict of Interest

The author declares that he has no conflict of interest.

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